SECTION ON MICROBIOLOGY

WEDNESDAY EVENING, MARCH 15, AT 8:30 O'CLOCK

I. EXECUTIVE SESSION
   a. Reading of the Minutes
   b. Recommendations of Nominating Committee
   c. Nomination of Section Officers and One Member of Advisory Committee

II. PAPERS OF THE EVENING
   a. Antihistaminic agents — studies of their metabolism by means of quantitative analytical methods
      Ely Perlman
      The Mount Sinai Hospital
   b. A mutation to heat resistance in a bacterial virus
      Mark H. Adams (by invitation)
      New York University College of Medicine
   c. Further experiments with Col. SK virus
      Claus W. Jungeblut
      Columbia University College of Physicians and Surgeons
   d. Modification of the course of a viral pneumonia in mice
      Harold S. Ginsberg (by invitation), The Rockefeller Institute for Medical Research

FRANK L. HORSFALL, JR.
Chairman
The Rockefeller Intitute for Medical Research

HARRY MOST
Secretary
New York University College of Medicine

Antihistaminic Agents—Studies of Their Metabolism by Means of Quantitative Analytical Methods

ELY PERLMAN
The Mount Sinai Hospital, New York

Hundreds of antihistaminic compounds have been synthesized since the initial studies of Bovet and Staub and some two dozen are available for clinical use. Until recently, studies of their metabolism have been restricted because the sensitive pharmacological assay methods are not applicable. Gelvin, McGavock and Drekter studied the absorption and excretion of Benadryl and Pyribenzamine by means of the Brodie and Udenfriend test for organic bases, and more recently Fleming and Rieveschl have synthesized Benadryl containing radioactive carbon. Studies with this labelled antihistaminic were reported by Dill and Glazko and were briefly described.

A fluorometric method suitable for the determination of a number of available antihistaminic compounds was described. The addition of cyanogen bromide to these compounds results in a new substance which exhibits an intense blue fluorescence when exposed to ultraviolet light. It was found that fluorescence develops only with those

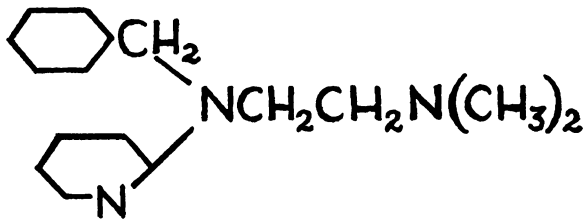

Fig. 1

antihistaminic substances which contain the three nitrogen atoms in the same configuration as found in Pyribenzamine (Fig. 1).

Those antihistaminics which contain the pyridine radical only, develop a color which can be intensified with coupling agents such as p-aminoacetophenone.

The test was applied to a study of the urinary excretion of Pyribenzamine from patients receiving this medication. No free bases were obtained when such urines were made alkaline and extracted with organic solvents. It was found, however, that if such urines were heated with alkali, material could then be extracted with organic solvents which would develop a fluorescence with cyanogen bromide. This material appears to be Pyribenzamine in view of the fact that it could be precipitated as the picrate with the same melting point as Pyribenzamine picrate, and mixed crystals exhibited the same melting point. It was further shown that the isolated material had antihistaminic activity by pharmacological test. The material was also studied at three values of pH in the Beckman ultraviolet spectrophotometer and was found to have identical maxima, minima and isobestic points as found for Pyribenzamine itself.

Applying this method to a study of the rate of excretion of single doses of Pyribenzamine in patients' urine, it was found that about 10 per cent of the ingested dose was excreted in 24 hours and that intravenously administered Pyribenzamine was excreted at the same rate and to the same extent as the same dose taken orally.

*A Heat Resistant Mutant of Bacterial Virus T5**

MARK H. ADAMS

New York University College of Medicine

Bacteriophage T5 is a bacterial virus capable of infecting and lysing strain B of E. coli. In a previous paper,[1] I described a peculiar instability of phage T5 when diluted in saline. This virus in broth is quite stable being rapidly inactivated only at temperatures above 70°C. However, when diluted in 0.1 N NaCl the virus is as rapidly inactivated at 30°C as it is at 70°C in broth. The addition of 10^{-2} M concentrations of divalent cations such as Ca++ and Mg++ to a 0.1 N NaCl solution gave a diluent in which the virus was as stable as in broth.

The addition of small amounts of these divalent cations apparently stabilized the virus against inactivation by heat. Equivalent concentrations of citrate ion would

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